

Appl No. 09/429,295  
Amdt. dated Aug. 24, 2004  
Reply to Office Action of May 4, 2004

**Listing of Claims:**

Claim 1 (currently amended): An oligomerization process comprising contacting a feedstock ~~which has not been preliminarily desulfurized by hydrogen treatment~~, comprising olefins and sulfur-containing molecules with a hydrotreating catalyst consisting essentially of a metal component selected from nickel, cobalt, chromium, vanadium, molybdenum, tungsten, or a combination thereof, in the absence of hydrogen at a temperature ranging from about ~~392°F~~ 200°C to about 600°F 315°C, whereby said olefins and sulfur containing molecules are oligomerized, wherein said feedstock is selected from the group consisting of C<sub>4</sub> olefin streams, C<sub>5</sub> olefin streams, C<sub>4</sub> and C<sub>5</sub> olefin streams, pygas streams, coker streams, light FCC gasoline, C<sub>7+</sub> reformate streams, light reformate streams containing benzene and toluene, pulp and paper byproducts, sugars, natural fatty acids and alcohols.

Claim 2 (original): The process according to Claim 1, wherein said process is carried out in the liquid phase.

Claim 3 (cancelled)

Claim 4 (original): The process according to Claim 2, wherein said hydrotreating catalyst comprises non-acidic supported mixed metal oxides.

Claim 5 (original): The process according to Claim 1, wherein said hydrotreating catalyst is supported on alumina and comprises mixed nickel and molybdenum oxides or mixed cobalt and molybdenum oxides.

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Claim 6 (original): The process according to Claim 1, wherein said catalyst is a heterogeneous catalyst selected from the group consisting of supported reduced metals, metal oxides, metal sulfides and combinations thereof.

Claim 7 (original): The process according to Claim 2, wherein said catalyst is a heterogeneous catalyst selected from the group consisting of supported reduced metals, metal oxides, metal sulfides and combinations thereof.

Claim 8 (currently amended): The process according to Claim 2, wherein said process is carried out at a temperature of from about 392°F 200°C to about 500°F 260°C; a space velocity of from about 0.1 WHSV to about 100 WHSV; and a pressure of from about 50 psig to about 1000 psig.

Claim 9 (currently amended): The process according to Claim 2, wherein said process is carried out at a temperature of from about 392°F 200°C to about 450°F 232°C; a space velocity of from about 0.1 WHSV to about 100 WHSV; and a pressure of from about 50 psig to about 1000 psig.

Claim 10 (original): The process according to Claim 2, wherein said hydrotreating catalyst is a NiMo/Al<sub>2</sub>O<sub>3</sub> catalyst.

Claim 11 (currently amended): The process according to Claim 1 wherein said process is carried out at a temperature of from about 400°F 205°C to about 500°F 232°C.

Claim 12 (previously presented): The process according to Claim 1 wherein said feedstock comprises about 1 wt.% of sulfur-containing molecules.

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Claim 13 (previously presented): The process according to Claim 1 wherein said feedstock comprises at least 10 to 100 ppm of sulfur.

Claim 14 (previously presented): The process according to Claim 1 wherein said feedstock comprises from greater than 50 to 100 ppm of sulfur.

Claim 15 (previously presented): The process according to Claim 1 wherein more than 95% of said sulfur-containing molecules are converted to oligomers.

Claim 16 (previously presented): The process according to Claim 1 wherein said ~~hydrocarbon~~ feedstock comprises 100 ppm to 10000 ppm of sulfur.

Claim 17 (previously presented): The process according to Claim 1 wherein said feedstock comprises dienes.

Claim 18 (previously presented): The process according to Claim 1 wherein said feedstock comprises 20-120 ppm dienes.

Claim 19 (withdrawn): The process according to Claim 3, wherein said feedstock is selected from the group consisting of light FCC gasoline, C<sub>7+</sub> reformate streams and light reformate streams containing benzene and toluene.

Claim 20 (withdrawn): The process according to Claim 1 wherein said feedstock is light FCC gasoline.

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### **SUPPORT FOR THE AMENDMENTS**

Support for the amendments to Claim 1 is found in the original disclosure as follows:

- (a) the phrase "which has not been preliminarily desulfurized by hydrogen treatment" has been deleted as superfluous because the clause following it requires that the feedstock contain sulfur-containing molecules (the phrase was added in the previous amendment and did not appear in the original Claim 1);
- (b) the phrase "olefins and" finds support *inter alia* at page 5, lines 25-26;
- (c) the phrase "consisting essentially of a metal component selected from ...." finds support at page 5, lines 17-19;
- (d) the phrase "whereby said olefins and sulfur containing molecules are oligomerized" finds support at page 5, lines 25-26, and also in Claim 3; and
- (e) the temperatures have been converted to the Celsius scale.

Claims 8, 9, and 11 have been amended to convert temperatures to the Celsius scale.

It is believed there is no possibility of new matter.